

ABSTRACT

A processing unit of the invention has multiple instruction pipelines for processing multi-threaded instructions. Each thread may have an urgency associated with its program instructions. The processing unit has a thread switch controller to monitor processing of instructions through the various pipelines. The thread controller also controls switch events to move from one thread to another within the pipelines. The controller may modify the urgency of any thread such as by issuing an additional instruction. The thread controller preferably utilizes certain heuristics in making switch event decisions. A time slice expiration unit may also monitor expiration of threads for a given time slice.